The claims remaining in the application are 1, 4 through 9, and 11 through 13.

REMARKS

The cross-reference to the parent application was amended to be up to date.

A correction was made to delete the inadvertent inclusion of a repeated word "to" in claim 9. This amendment was made to correct a mere clerical matter and not for any substantial reason related to patentability.

The Applicant would respectfully submit his enclosed Declaration under 37 CFR §1.132 for the Examiner's consideration. The Declaration contains and discusses four additional Examples, 8 through 11, where the results are graphed in corresponding FIGS. 8 through 11.

As indicated in the Declaration, FIG. 8 shows how two aminocarboxylic acids (Na_3HEDTA and Na_5DTPA) do not readily form complexes with borate ions at least at 180°F, within 2 hours, and FIG. 11 shows a similar result for one aminocarboxylic acid (Na4EDTA) at the much reduced temperature of 75°F within one hour. FIGS. 9 and 10 together show that when an aminocarboxylic acid chelant does interact with the borate ion, such as Na_4EDTA at 200°F, the complexation is for a rather short period of time and such interaction does not prevent the guar polymer chain itself from degradation.

It should also be noted that the interaction seen in FIG. 9 between the Na_4EDTA and XL-1L is not a complete, permanent, or long term sequestering or complexation. FIG. 9 further shows that increasing the amount of crosslinker will to a degree offset crosslinker sequestering-complexation with the aminocarboxylic acid present, but continued increase in amount of crosslinker will eventually result in *lower* viscosity and "over crosslinking" of the guar polymer; and that a stable crosslinked polymer cannot be achieved by simply increasing. Optimizing the crosslinker concentration occurs when 5.0 pptg Na_4EDTA is present in the B9 Emerald FRAQ fluid at 200°F using 4.0 gptg XL-1L.

It should be remembered that in borate crosslinked guar fluids, as here, a fluid may appear broken at the test temperature, but upon being cooled down to room temperature, the fluid often "heals" into a viscous-looking crosslinked gel again. The Examiner's attention is further respectfully directed to FIG. 10 that shows how increase in crosslinker concentration will not prevent the direct polymer chain degradation with

Na_4EDTA present, and that further FIGS. 9 and 10 show how the increased amount of crosslinker (such as the 4.0 gptg XL-1L loading) apparently will only slow the degradation rate down a small amount (a few hours) during the first 8 hours or so the fluid is kept at 200°F, but will not prevent the evidence of significant polymer chain degradation when the fluid is kept at 200°F for 24 hours. One having ordinary skill in the art would expect that if permanent sequestering or complexation of the borate ions would occur then increasing the crosslinker concentration would eventually tie up most all of the aminocarboxylic acid chelant and a stable crosslinked fluid could be achieved and little if any aminocarboxylic acid would then be available for any further uncrosslinking of the polymer and/or breaking of the polymer chain. However, this is not the case, as FIG. 10 shows that all test samples with 5.0 pptg Na_4EDTA, regardless of the amount of XL-1L crosslinker present, showed *no* crosslinked or uncrosslinked viscosity after 24 hours at 200°F *or* when cooled to 75°F.

Additionally, the Examiner is requested to note that the sample in FIG. 10 using 2.4 gptg XL-1L crosslinker and no breaker (no Na_4EDTA present) showed noticeable crosslinked viscosity after 24 hours at 200°F and an increase in crosslink viscosity when cooled to 75°F due to the healing phenomenon. However, no such healing occurred in any of the other systems, indicating degradation of the polymer backbone itself.

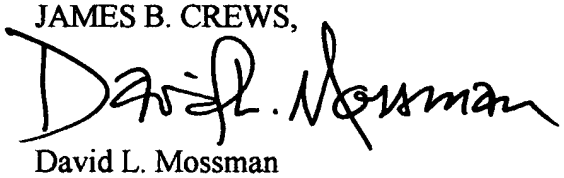
The Examiner's attention is also respectfully directed to FIG. 11 which shows that 5.0 pptg and even 10.0 pptg Na_4EDTA do not appear to sequester any noticeable amount of borate ions at the considerably lower temperature of 75°F over a 1 hour period, even with the use of a relatively low amount of borate crosslinker (1.2 gptg XL-1L has about 1.32 pounds of available borate ions).

It is thus respectfully submitted that this data demonstrates the breaking of the viscosity of polymer gelled aqueous fluids comprising a crosslinked guar or derivatized guar polymer gel by using an effective amount of at least one aminocarboxylic acid within an optimum fluid temperature range to break down the gel by acting on the crosslinker but primarily acting directly on the polymer gel, as claimed.

It is respectfully submitted that the amendments presented above permit the claims directed to the embodiment of the invention related to crosslinked polymer gels to

be allowed. Consideration and allowance of the claims are respectfully requested. The Examiner is respectfully reminded of his duty to indicate allowable subject matter. The Examiner is invited to call the Applicant's attorney at the number below for any reason, especially any reason that may help advance the prosecution.

Respectfully submitted,
JAMES B. CREWS,



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